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# Worldwide Report

TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

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4 May 1984

WORLDWIDE REPORT  
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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HONG KONG

BRIEFS

DIGITAL PABX--The Industrial Department of Dodwell Trading has received approval from Hongkong Telephone to supply the Digital PABX system for connection to telephone company lines. The Digital PABX is manufactured by GEC Information Systems, and is based on the British Telecom Monarch PABX. GEC played a major role in the development of this successful system. Dodwell will initially be offering two versions of the Digital PABX, catering for either 150 or 300 lines. Both use the most advanced microprocessor technology and turn a telephone into an efficient business tool. A voice synthesiser is available to enable blind operators to use the Digital PABX, which is marketed under the name LYRIC. [Text] [Hong Kong SOUTH CHINA MORNING POST in English 7 Mar 84 Business News p 3]

CSO: 5500/7522

PEOPLE'S REPUBLIC OF CHINA

NATIONAL RURAL BROADCAST WORK CONFERENCE OPENS

HK090341 Zhengzhou Henan Provincial Service in Mandarin 1030 GMT 7 Apr 84

[Text] The national conference on broadcasting work in rural areas opened in Luoyang this morning. (Ge Yuli), deputy director of the local propaganda work bureau of the Ministry of Radio and Television, announced at the conference that the situation in wire broadcasting work in rural areas had been improving. By the end of 1983, special rediffusion networks linking townships with counties have been built in 65 percent of the localities throughout the country; there are 90 million loudspeakers; the quality of broadcasting programs has been conspicuously improved; and 20 percent out of the 137 programs selected as outstanding programs at the national broadcasting program competition which just closed were produced by county broadcasting stations.

The tasks of this conference are to deliberate on how to implement in the rural broadcasting work the guideline laid down by Document No 37 issued by the CPC Central Committee in 1983 as well as other principles and policies concerned, and to exchange experience in rural broadcasting work, to make broadcasting work at the county level keep up with rural development and serve more efficiently the building of two civilizations in rural areas.

Present at the conference are 124 people, including responsible comrades in charge of rural broadcasting work from the radio and television departments and bureaus of 29 provinces, municipalities, and autonomous regions throughout the country; responsible comrades of certain prefectures and counties which have made outstanding contributions to developing broadcasting work in rural areas; and the directors of all prefectural and city radio and television bureaus in the province.

This morning's session was presided over by Comrade (Zhou Xinwu) of the Ministry of Radio and Television. Comrade (Ge Yuli) gave a report entitled "Conscientiously Implement Document No 37 Issued by the CPC Central Committee in 1983 and Work Hard To Create a New Situation in Rural Broadcasting Work." Comrade (Kang Zhongren), deputy secretary of the Luoyang Prefectural CPC Committee, and Comrade (Li Guangzhao), director of the Henan provincial radio and television department, addressed the session.

CSO: 5500/4183

PEOPLE'S REPUBLIC OF CHINA

NATIONAL CONFERENCE ON RURAL BROADCASTING ENDS

HK181303 Zhengzhou Henan Provincial Service in Mandarin 1030 GMT 17 Apr 84

[Report by reporter (Wang Zihou) and correspondent (Zhang Shibao) of the Henan Radio and Television News Center]

[Excerpts] The national conference on broadcasting work in the rural areas, which has just concluded, laid down a new guiding principle for wired broadcasting work in the rural areas. This principle is to build, with county stations as the centers, with communal and township stations as the base, with special lines as the chief means of transmission, and with other facilities as the supplementary means, fine quality networks connecting all villages and households. The conference pointed out the need to attain, using arduous efforts and following this principle the goals set by the central authorities as scheduled, in order to broadcast radio programs to all counties, townships, and villages, except those remote areas that are sparsely populated, within 3 to 5 years, so as to give every person and every household the opportunity to listen to radio programs.

The conference was held in Luoyang Prefecture in our province. It opened on 7 April and concluded on the 15th of the same month. (Ge Yuli), deputy chief of the Eighth Propaganda Bureau under the Ministry of Radio and Television, made a summary speech. Present at the conference were Hou Zhiying, Standing Committee member and director of propaganda of the Henan Provincial CPC Committee; Deputy Director (Hu Yong) of the Propaganda Department; and Secretary (Zhao Linjie) of the Luoyang Prefectural CPC Committee.

It was pointed out at the conference that wired broadcasting, frequency modulation broadcasting, and television have their strong points as well as their limitations. They can supplement one another but cannot replace one another, and can repulse one another. Wired broadcasting has obvious advantages over its counterparts in the rural areas. It is indispensable in the building of radio and televisions with distinctive Chinese characteristics. Whether at present or in the future, it cannot be replaced by wireless broadcasting and frequency modulation broadcasting. Particularly after the application of the system of contracted responsibilities with payment linked to output on a household basis, wired broadcasting has become an indispensable tool of the party, the government, the peasants, and the masses.

During the conference, all the comrades attending visited the wired broadcasting facilities in Shaan County, Ruyang County, and Sanmenxia City in Luoyang Prefecture. At the conference representatives of 17 units, including those from Jian County in Jilin Province, Linli County in Hunan Province, and Kaiping County in Guangdong Province, spoke at the conference and relayed their experience in making a success of wired broadcasting.



On behalf of the provincial CPC committee, Comrade Hou Zhiying congratulated the conference on its success and called on Henan's broadcasting departments to learn with an open mind from the advanced experience of the brother provinces, brother cities, and brother autonomous regions, to earnestly implement, on the guiding principle laid down at this conference for the broadcasting work in the rural areas, and to strive to create a new situation in Henan's broadcasting work in its rural areas.

CSO: 5500/4188

PEOPLE'S REPUBLIC OF CHINA

COMMUNICATIONS SATELLITE LAUNCHED 8 APRIL

Functioning Normally

OW101205 Beijing XINHUA Domestic Service in Chinese 1153 GMT 10 Apr 84

[Text] Beijing, 10 Apr (XINHUA) -- China successfully launched an experimental communications satellite at 1920 [1120 GMT] on 8 April. The satellite entered orbit as expected. It is operating satisfactorily and functioning normally. This marks another new achievement for China's space technology.

Report on Satellite

HK101214 [Editorial Report] Beijing Television Service in Mandarin on 10 April begins its regular 1100 GMT news broadcast with a 1.5-minute filmed report on China's "successful launch of an experimental communications satellite" on 8 April.

The film opens with a shot of the experimental communications satellite being launched at an unidentified site. The camera then cuts to show some 12 people sitting in a control room. This is followed by a shot of the ascending satellite and a shot of a control panel. The film then ends with a long shot of the satellite. During the aforementioned scenes, the announcer says: "Viewers, we now report to you a piece of heartening good news: According to this station's reporter, our country successfully launched an experimental communications satellite at 1920 [1120 GMT] on 8 April. The satellite is already in a predetermined orbit. It is moving well and is working normally. This is another new achievement for our country's space technology."

CSO: 5500/4183

PEOPLE'S REPUBLIC OF CHINA

COMMUNICATIONS SATELLITE IN POSITION, BEGINS WORK

OW181852 Beijing XINHUA in English 1841 GMT 18 Apr 84

[Text] Beijing, April 18 (XINHUA) -- It took less than seven days for China's experiment communications satellite to transfer from its great elliptical space orbit into the earth's quasi-synchronous orbit and finally place itself at the pre-programmed position. The satellite, launched on April 8, was positioned in 125 degree east longitude above the earth's equator at 18:27.57 hours on April 16. All meters and instruments on it have been functioning normally. Experiment on communications, and radio and television transmission has also been working well.

The space telemetering and control center on April 10 issued orders from the ground to control the ignition of the satellite's engine, thus enabling it punctually to move from the great elliptical space orbit into the earth quasi-synchronous orbit.

At 0841 hours on April 10, the satellite, which had operated for 37 hours on the great elliptical space orbit, began its four revolutions around the earth, approaching a height of about 36,000 kilometers. Data on the video display terminal showed that it was the best time for the automatic ignition as the satellite was at its best desired posture and its pre-programmed period was reached. The satellite depended on orders from the ground to constantly readjust its orbit, postures, and period. According to data printed by computers, the satellite accepted all orders issued by the control center during its 37-hour flight in the elliptical orbit and also performed all movements required accurately.

CSO: 5500/4188

PEOPLE'S REPUBLIC OF CHINA

ZHANG AIPING CALLS VIA SATELLITE

OW181914 Beijing XINHUA in English 1846 GMT 18 Apr 84

[Text] Urumqi, 18 Apr (XINHUA)--Several hundred thousand people here tonight watched programs of China Central Television (CCTV) through transmission of China's first experimental communications satellite. The satellite was launched on April 8 and successfully placed in the pre-programmed position on April 16. Tonight's programs included news, commercials, and TV plays, with excellent clarity and articulation.

In Xinjiang, where communications were backward, people usually could watch CCTV programs one week later than Beijing viewers. With the help of China's own communications satellite, the local people are now able to know what is happening in Beijing every day.

Telephone linkups between Beijing and Urumqi were also tested through the satellite today. At 10 a.m., Deputy Secretary General of the Central Military Commission Zhang Aiping from Beijing called Wang Enmao, first secretary of the Xinjiang Autonomous Regional Communist Party Committee in Urumqi. The local party leader told Zhang that his voice transmitted through the satellite was very distinct. Both of them greeted each other for the successful launching of China's communications satellite.

CSO: 5500/4188

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

COMMUNICATIONS SATELLITE POSITIONED SUCCESSFULLY--Beijing, 18 Apr (XINHUA)--The experimental communications satellite China launched on April 8 was successfully positioned in 125 degree east longitude and above the earth's equator at 18:27.57 hours on April 16. All meters and instruments on the satellite have been functioning normally. Experiment on communications, and radio and television transmission has also been working well. This is a major achievement of China's socialist modernization drive and another victory of China's policy of independence and self-reliance. It is the result of painstaking and hard work of all those involved in the project under the leadership of the Central Committee of the Chinese Communist Party, the State Council, and the Central Military Commission. [Text] [OW180934 Beijing XINHUA in English 0926 GMT 18 Apr 84]

CSO: 5500/4186

## NAVY EXPLAINS CLOSING OF RADIO TALCAHUANO

PY161505 Santiago LA TERCERA DE LA HORA in Spanish 9 Apr 84 p 42

[By Mario Aravena M.]

[Text] Talcahuano--The Chilean Navy, through its commander of the Second Naval Zone in Talcahuano, said in an official communique that in 1980 the Maritime Governorship notified the general manager of Radio Talcahuano that this radio station was illegally occupying Navy property in Rocuant Island, where the station has its transmitter and antenna.

The note released to the press says: "In relation to the measures adopted to normalize the illegal occupation by Radio Talcahuano, this Navy Command reports: 1. Since 30 June 1970, Radio Talcahuano has had its transmitter and antenna without legal authorization on government property in Rocuant Island. Decree 102 of 3 February 1966 authorizing the installation of the radio equipment expired on 30 June 1970." The second point says that "since that date the radio station has not made any payments for the use of this property. 3. On 20 June 1980, the Maritime Governorship of Talcahuano notified the radio station's general manager of the illegal occupation of the property, that no payment had been made, that the property must be vacated, and that payment must be made. In view of this notification the radio station requested on 30 June 1980 permission to continue the illegal occupation. 4. As time passed and Radio Talcahuano did not solve the illegal situation, the Maritime Governorship on 11 December 1980--in accordance with Article 56 of the Maritime Concessions General Regulations, approved by Decree 340 of 1960--ordered the beach illegally occupied by the radio station be vacated by requesting from the Regional Intendency the cooperation of the police."

The Navy communique goes on to say that in view of the negotiations carried out by Radio Talcahuano with the Regional Intendency, the radio station on 27 January 1981 was given a grace period of 90 days to transfer its equipment to another site. The communique also says that when the radio antenna fell some time ago, the radio station set up a temporary antenna and later a permanent antenna in the same place without the authorization of the maritime authority. The communique adds: "Despite this situation, Radio Talcahuano continued to illegally occupy this property and avoided paying approximately 5 million pesos for the use of the property. Therefore, in compliance with the legal regulations established by Decree 340 of 1960 of the Ministry of National Defense, a request was submitted to the State Defense Council to start legal action to obtain the back payments owed since 30 June 1970 in addition to obtain the clearing of this government property."

CSO: 5500/2036

## OFFICIALS REPORT SUCCESSFUL WORKING OF INSAT-1B

New Delhi PATRIOT in English 26 Mar 84 p 5

## [Text]

Bangalore, March 25 (PTI) — The triple services of India's multipurpose satellite INSAT-1B are being drawn upon by the user agencies as per schedule and the satellite now nearly six months in orbit is performing 'excellently', according to Indian Space Research Organisation (ISRO) sources.

The sources said here today that the Posts and Telegraphs (P&T), the telecommunications user agency had pressed into service over 1000 way long distance circuits so far at the rate of 200 per month. In the first year of the satellite's operation 2000 circuits are to be pressed into service, while an additional 1900 are to be used in the second year and 300 in the third year.

The meteorological segment of the satellite was relaying 60 very high resolution radiometer (VHRR) images both in the visible and the infrared images of the earth every day in a routine fashion. The frequency of the pictures would increase as soon as the monsoon began in May-June. The data from the VHRR was being received at the Meteorological Data Utilisation Centre (MDUC) Delhi and converted into pictures of earth cloud cover over India.

The sources said the MDUC in collaboration with the Indian Meteorological Department (IMD) had worked out techniques for deriving the direction and speed of upper winds over India and adjoining ocean areas using half-hourly images transmitted by the satellite. The data processed with the MDUC would be transmitted to secondary utilisation centres in 20 locations.

The sources said 12 data collection platforms had been installed. These would be used for collection of meteorological, hydrological

and oceanography data from remote uninhabited location. The BCP procession facility at the MDUC was now operational. They said the number of land based CPs would be raised to 100 in a phased manner by the end of 1985 at the rate of four DCPs per month starting from the first quarter of this year.

The ISRO sources said action was also in process for indigenous fabrication of an experimental model of ocean, data-buoy for collection of environmental data from the ocean. The commissioning of the first ocean DCP was scheduled for the end of this year.

The sources said the prototype model of the disaster warnings system (DWS) to be installed in selected coastal areas of south Andhra Pradesh and northern Tamil Nadu has been successfully tested with the INSAT-1B. Deployment of DWS sets at the rate of six per month would be taken up after initial testing of the system from mid-1984.

Under the television segment, the sources said, 37 of the 45 TV transmitters had already switched over to INSAT-1B.

Further, under the TV utilisation scheme about 800 direct reception sets have been deployed in Andhra Pradesh. Six hundred are in operation while remaining are being progressively operationalised.

They said a scheme for TV service availability to jawans in forward areas using reception of INSAT-1B was under development.

The sources said, under radio networking (RN), the All India Radio planned to deploy 94 five channel radio networking terminals. The deployment of these terminals was expected to be completed by mid-1984.

CSO: 5500/7122

INDIA, UAE SIGN PACT ON SUBMARINE CABLE

Bombay THE TIMES OF INDIA in English 27 Mar 84 p 15

[Text] BOMBAY, March 26 (UNI): The India-United Arab Emirates submarine cable, a \$ 100-million communications project linking a number of countries in the Indian Ocean region, took concrete shape today with the signing of a memorandum of understanding between the two countries.

The agreement to provide a submarine telephone cable from Bombay to Abu Dhabi was signed at the Videsh Sanchar Bhavan here by Mr. Ali Salim Al Owais, general manager of the Emirates telecommunications corporation, and Mr. K. C. Katiyar, director general of the overseas communications service.

The cable, approximately 1,100 nautical miles long with a capacity of around 1,200 telephone circuits, will become operational by 1986.

Presiding over a function to mark the occasion, Mr. Thomas Kora, secretary in the ministry of communications, said submarine cables were as much an essential element of international telecommunications as the satellite system.

In the Indian Ocean, the first broad band cable between India and Malaysia became operational in 1981. A microwave link was also planned between Bombay and Madras which, inter alia, would link the India UAE cable with the Indian Ocean Commonwealth cable between Madras and Penang, enabling transit operations with countries east and west of India.

UAE consul general, Mr. Ibrahim, highlighted that the cable would further strengthen the excellent trade links between the two countries.

Mr. Ali Salim lauded the long telecommunications history between the two countries, saying the cable would open the way to many other countries to take advantage of another international route of communications.

UAE was brought on the Indian satellite map via Bahrain in 1971 and direct in 1977. The UAE is also on one of the busiest communications route.

The submarine cables are laid with the help of special ships fitted for the purpose. Once laid, they rest at the bottom of the sea several kilometers deep along with their repeaters. The India-UAE cable will have 150 repeaters which amplify the signals which undergo attention after travelling the intervening length of the cable.



## GANDHI INAUGURATES NEW TELEVISION RELAY STATIONS

Madras THE HINDU in English 24 Mar 84 p 1

[Text]

VIJAYAWADA, March 23.

The Prime Minister, Mrs. Indira Gandhi, said here today that television was not a luxury, but a modern instrument which promoted education, propagated scientific farming and national and cultural integration. We did not have it all these years as we did not give much importance though many countries, smaller and poorer than us, have it already," she said while inaugurating the one kilowatt TV relay station atop the Gandhi Hill.

PTI reports:

Apart from educational programmes, TV also provided audio visual image of the various schemes undertaken by the State and Central Government for ameliorating the sufferings of the poor. The Chief Minister, Mr. N. T. Rama Rao, presided over the function which was attended by the Union Minister for Information and Broadcasting, Mr. H. K. L. Bhagat, the State Information Minister, Mr. Ch. Venkatarama Jogaiah, members of Parliament and State legislators.

If unity was to be maintained and social and economic progress accelerated, we should not stretch any "ism" beyond a point — whether it was regionalism or any other, Mrs. Gandhi said.

Referring obliquely to the Punjab situation, she said any "ism," when stretched beyond a point brought misery to the people and undermined the unity and integrity of the country.

Mr. Rama Rao, in his address of welcome in chaste Hindi, said the State-owned organs of mass communication — TV and radio — should not become the sole property of the Centre. The States, which were also being ruled by elected representatives of the people, must get sufficient time to project their schemes and achievements.

Mr. Rama Rao said the television should

tell the people — particularly the lower strata of society — what the Government was doing for them. If this aim was to be fulfilled then the Andhra Pradesh Government should get enough time both on television and radio.

Production studios at Hyderabad and Vijayawada were essential, he said and appealed to the Prime Minister and the Information and Broadcasting Minister to sanction them immediately.

Earlier, Mr. Bhagat said Vijayawada was the 46th station to come on the TV map. By the end of 1984 about 100 stations will start working in the country and of these, 15 will be located in Andhra Pradesh.

Work on setting up a TV production centre at Hyderabad would soon be undertaken by the Doordarshan authorities, he said. The relay station will for the present beam programmes from Delhi through Insat-1B.

Talking to pressmen at Begumpet airport tonight before leaving for Delhi at the end of the one day visit, Mrs. Gandhi said her day's visit to Andhra Pradesh was very good though rather rushed. There was good response both at Vijayawada and Guntur.

**Council abolition:** Asked to comment on the Telugu Desam Government's plea for abolition of the Legislative Council, Mrs. Gandhi said everything was provided for in the constitution. Any new Government which came to power could not change it. She said she had already made this clear in the context of abolition of the Council.

**Delicate:** In reply to another question, Mrs. Gandhi said the situation in Punjab was delicate.

Mrs. Gandhi was seen talking with the Governor, Mr. Ram Lal and the chairman of the Legislative Council, Mr. Mukassir Shah separately for a few minutes at the airport.

CSO: 5500/7117

## PRIVATE SECTOR TO MANUFACTURE COMMUNICATIONS EQUIPMENT

Madras THE HINDU in English 24 Mar 84 p 6

[Text] NEW DELHI, March 23. The Union Deputy Minister for Electronics, Dr. M. S. Sanjeevi Rao, announcing the Government's decision to allow the private sector to manufacture telecommunication switching and transmission equipments, said steps would be taken to guard against repetitive imports of technology.

In his statement to Parliament today justifying the decision he said, "with the rapid advance in technology and more telecommunication equipment getting standardised with well-defined terminal interfaces, it has been considered to secure the cooperation of the private sector on a selective basis to manufacture some of these equipment and to permit the manufacture of some of the items in the private sector.

"This would obviate the situation where we, at a later date, may either be unable to produce the basic equipment which is necessary or import such equipment or not meet the legitimate demand of the communication sector."

Rigid specifications: The statement points out that "as the efficiency and stability of the system depend on the specifications of the equipment, their quality and characteristics, the specifications would have to be laid down very carefully not only to meet the requirements of the internal communication system, but also of the international communication system.

To achieve this, very rigid specifications, testing procedures and type approvals would be necessary before equipment manufactured by private organisations can be accepted in the network. Steps would be taken to guard against repetitive imports of technology based on import of kits and sub-assemblies, particularly in the wake of opening the participation to the private sector."

The Minister earlier drew attention to the Schedule of the Industrial Policy Resolution of 1956 listing the industries the future development of which would be the exclusive responsibility of the State. Telephones and telephone cables, telegraph and wireless apparatus (excluding radio receiving sets) are included in this list.

"In view of this entry in Schedule A", the Minister said, "these items i.e., telephone and associated equipment can be manufactured only in the public

sector. However, the Industrial Policy Resolution permits expansion of the existing privately-owned units or the possibility of the State securing the cooperation of private enterprise in the establishment of new units when the national interests so require but it has to be ensured that the requisite power to guide the policy and control the operations of the undertakings remains with the State."

Backbone of industrial development: Drawing attention to the need for considerable significant and rapid improvement of communication in the country. Dr. Rao said, "Communication is the backbone of industrial development and is also necessary for reaching the rural masses. Apart from telephones, other significant forms of communication like telex, data communication, electronic mail, facsimile and of various other types have to be developed very rapidly in our country to meet the aspirations of our people. One of the major problems facing us in this area is the shortage of equipment.

CSO: 5500/7118

## BRIEFS

INSAT-1C DESIGN REVIEW--BANGALORE, March 25. The design review for INSAT-1B now in space, has been completed. The satellite scheduled for launch in 1986 would be put together in 1985 after its various sub-systems have been tested fully. ISRO sources said today that though functionally identical to INSAT-1B, it had all the changes resulting from the INSAT-1A experience implemented on INSAT-1B. INSAT-1B now nearly six months in orbit is performing "excellently". The sources said that the Posts and Telegraphs (P and T), the telecommunications user agency had pressed into service over 1000 long distance circuits so far at the rate of 200 per month. In the meteorological segment, the satellite was relaying 60 very high resolution radiometer (VHRR) images both in the visible and the infra-red images of the earth every day in a routine fashion. The frequency of the pictures would increase as soon as the monsoon began in May-June. The data from the VHRR was being received at the Meteorological Data Utilisation Centre (MDUC), Delhi and converted into pictures of earth cloud cover over India. The data processed at the MDUC would be transmitted to secondary data utilisation centres in 20 locations. All the 20 centres are expected to be operational by the second quarter of 1984. Twelve data collection platforms (DCP) had been installed. The number of land based DCPs would be raised to 100 in a phased manner by the end of 1985 at the rate of four DCPs per month starting from the first quarter of this year. The sources said the prototype model of the Disaster Warning System (DWS) to be installed in selected coastal areas of south Andhra Pradesh and northern Tamil Nadu had been successfully tested with the INSAT-1B. Deployment of DWS sets at the rate of six per month would be taken up after initial testing of the system from mid-1984. Under the television segment, 37 of the 45 TV transmitters had already switched over to INSAT-1B. [Text] [Madras THE HINDU in English 26 Mar 84 p 16]

INSAT-1B BENEFITS NOTED--Mr L. C. Kapur, general manager, Eastern Telecommunication Region, has claimed that with the launching of INSAT-1B for its utilization as the main communication medium, eastern India, especially the north-eastern area, had been benefited to the maximum extent in the telecommunications network. As many as 12 earth stations are being fed by INSAT-1B and efforts are being made to make the best use of it for the benefit of the remote areas where there are no reliable and high-grade telegraph and telephone services. [Text] [Calcutta THE STATESMAN in English 24 Mar 84 p 7]

NORTHEAST TELECOMMUNICATIONS PLANS--Imphal, March 24 (PTI): Insat 1-B will facilitate the working of 8,000 channels in the northeastern region and four satellite stations will come up shortly in Arunachal Pradesh. According to the Union minister of state for communications, Mr. V. N. Gadgil, a Rs 1-crore container exchange with 2,000 lines will be set up in this state capital by December. The Centre has taken a policy decision to make telecommunication facilities available within a radius of 5 km in the north-east by 1990 he said. The Centre has also taken steps to improve postal and telephone exchange systems in hill and tribal areas besides backward zones, Mr Gadgil added. Earlier, in the day, Mr Gadgil had discussions with the governor, Mr S. M. H. Burney, and the chief minister, Mr Rishang Keishing, on the telecommunication system here and visited the Imphal telephone exchange office. [Text] [Calcutta THE TELEGRAPH in English 25 Mar 84 p 5]

CSO: 5500/7120

FRENCH TELEPHONE SYSTEM TO REPLACE OBSOLETE JAPANESE SYSTEM

Kampala THE PEOPLE in English 2 Apr 84 pp 2, 16

[Article by A. Thomiko]

[Text] The 100 million French franc telephone exchange being installed by Uganda Posts and Telecommunications Corporation (UP&TC) is expected to start operating by October this year.

The Project Co-ordinator, Mr John C. Namara has told "The People."

The contract to install the new exchange was signed in November 1981 between a French firm, CIT ALCADEL and UP&TC. The firm is to manufacture, install and commission the Stored Programme Controlled (SPC) Exchange on loan arrangement from the French government.

The terms of the contract also guarantees 12 months during which the firm can replace the equipment if UP&TC is not satisfied with the working of the equipment.

Mr Namara said the construction work on the project started last May but had been slow due to lack of materials, especially cement but materials have now arrived and work is going on uninterrupted.

About 30 percent of the installation work has already been completed. The completed network will serve about 28,700 subscribers in Kampala, Makerere, Kawempe, Lubowa, Nsambya, Mbuya and Mukono areas, he said.

Mr Namara explained that the project provides a modern electronic exchange with increased capacity to satisfy the rising demand of subscribers and other customers for whom the Corporation wants to improve the quality of services rendered to them.

He explained that the Corporation is replacing the entire exchange because the present Japanese, Crossbar and British Strowger installed twenty years ago are now obsolete.

The SPC Exchange is a most modern computerised system that produces bills automatically.

The computerised system will save sending its bills to Nairobi where subscribers' bills sometimes delays for as long as five months. But this time, the Corporation will be able to send bills to customers within two or three months or any other period the Corporation sees convenient.

Mr Namara said the system records duration, destination and date of calls and eliminates possibilities of customers denying having made certain calls on attitude which has cost the Corporation a lot of money and reputation.

The main exchange will be at the Telephone House at the Post Office in Kampala and a computer system at the main exchange will control the Satellite Exchanges at all the satellite station linked to the main exchange by junction cable, he explained.

The new exchange will require changing the telephone numbers from five to six digits for upcountry towns.

At the moment, 20 engineers and technicians are being trained at the Kampala Telephone House to operate and maintain the new exchange.

CSO: 5500/60

## BRIEFS

NEW RADIO TRANSMITTERS--The Ministry of Information and Broadcasting is determined to acquire powerful transmitters by the end of this year to improve on radio signals all over the country. This was stated in parliament today by the deputy minister of information and broadcasting, Mr Matia Kitembo, when he was contributing to the debate on communication from the chair. The deputy minister informed the house that for the last 3 years the ministry has been able to restore 13 out of 22 production transmitters. The external service which had been out of order for some time due to technical problems has been repaired and is back in operation. Earlier the deputy minister of finance, Mr Makmud, tabled the 1981/82 annual report of the Bank of Uganda. [Text] [EA191400 Kampala Domestic Service in English 1700 GMT 18 Apr 84]

CSO: 5500/61



KAUNDA COMMISSIONS MICROWAVE LINK

MB131440 Lusaka Domestic Service in English 1115 GMT 13 Apr 84

[Text] His excellency the president, Dr Kaunda, today commissioned the 18 million kwacha Zambia-Zimbabwe microwave link at Victoria Falls Town in Zimbabwe in the presence of Prime Minister Robert Mugabe. Both President Kaunda and Premier Mugabe spoke to President Canaan Banana in Harare and Prime Minister Mundia in Lusaka by telephone from this Victoria Falls Town after commissioning the link.

Speaking during the commissioning, Dr Kaunda said the microwave link, which provides 960 channels between the two states, will enhance political, economic, and cultural cooperation and boost tourism between Zambia and Zimbabwe. He said the link, which was completed in a record time of 18 months with Norwegian and Swedish aid, should be used to the maximum by Zambia, Zimbabwe, and Botswana and all should intensify cooperation among themselves. The president said Zambia and Zimbabwe should quickly work out the exchange of television programs provided by the new microwave link. With the help of the microwave link, residents of Livingstone and Victoria Falls Town will now tune their television sets either to Television Zambia or Zimbabwe because they had two channels. However, this would not be possible for residents far away from the border.

Dr Kaunda said the microwave link is part of the pan-African telecommunications scheme and will increase the pace of economic freedom without which political independence would be useless. He said the regional economic cooperation must be strengthened with effective communications systems. President Kaunda and Prime Minister Mugabe urged Zimbabweans to guard jealously the microwave link installation.

CSO: 5500/58

SERVICES, FINANCING OF EUTELSAT'S ECS, TELECOM SATELLITES

Paris SCIENCES & AVENIR in French Feb 84 p 39

[Unsigned article]

[Text] While awaiting the hypothetical launching of TDF-1, the first French direct television satellite, France will this year have its own two paths of space communication: one channel on ECS 1, launched in June 1983, and Telecom 1, which Ariane should place in orbit in May 1984. These two satellites can supply telecommunication services (telephone, telex, data transmission) as well as television broadcasting. But since they are lighter and therefore less powerful than the future DBS (Direct Broadcast Satellite), they require larger and more expensive ground installations, particularly in the form of 2.20 m antennas (Telecom 1) and even 3-meter ones for ECS 1.

With the European Communication Satellite (ECS 1), the Old Continent has become completely autonomous. The entire device, financed by the European Space Agency for the launching, and by Eutelsat for the satellites, is developed in Europe. The Eutelsat program includes five satellites: ECS 2, which in principle will be launched in February, will back up ECS 1 in case of failure; to guarantee complete service continuity, a third satellite, stored on the ground, could replace the first two; construction of ECS 4 and 5 will start later. With a weight of 1045 kg at launching and 610 kg when first placed in service, ECS 1 offers a minimal electric power of 900 watts and transmits on the 11/14 GHz band. Its 12 repeaters allow the simultaneous operation of nine channels when not in eclipse, and five channels during eclipse, when the Earth's shadow blocks the sun's radiation from its photovoltaic panels. During these periods, electric power is provided by batteries.

In public telecommunications, the capability of ECS 1 amounts to 12,000 telephone circuits, which is equivalent to the Intelsat V designed by Ford Aerospace. With ECS 2, a multiservice system will increase this capacity by allowing teleconferences, data exchange among computers, rapid telecopy, and so on.

This approach to services intended for internal communications in enterprises, is the essential objective of Telecom 1. This satellite will make available a digital network with a broad range of rates (from 2400 bits/second to 2 megabits/second). In addition, it will provide telephone service to overseas territories and departments, as well as the broadcast of French television channels to these faraway lands.

As for ECS, the launching weight of Telecom 1 is about one ton, with 600 kg in geostationary orbit, and its power consumption is 700 watts. Developed by Thomson-Communications, Telecom 1 is equipped with 12 repeaters. The first six (14/12 GHz) include 20 W traveling wave tubes (TWT); four others (6/4 GHz) 8.5 W TWT's; and the last two (8/7 GHz) are reserved for military purposes.

11,023

CSO: 5500/2631

BRIEFS

MOBILE TELEPHONE COOPERATION--If the joint consultation of French and German TTP's in the area of mobile telephones is to be sued to advantage, industrial projects must depend on both countries' firms at the same time. At an opened competition last November on the occasion of the Mitterrand-Kohl summit, the Anonymous Telecommunications Company (SAT) found its partner. Or, to be more exact, its partners. The French firm has allied itself with AEG-Telefunken and Standard Eelcgric Lorenz for the joint development and marketing of a totally numerically-controlled mobile telephone system. Combining a specialist in integrated circuits (AEG) with switching and digital transmission industries (SAT and SEL), the new group is now ready to present the fruits of its initial research to the authorities. Although Great Britain is not a member of the Franco-German team, this step is characteristic of the creation of a unified Europe, on a certain level. The objective: the reduction of costs--possibly from \$2,500 to \$700. SAT estimates that its material will not cost more than top-of-the-line car stereo equipment. Will this price be reasonable enough to sell the five million sets expected to equip France, Germany, Switzerland and Italy by the end of the century (there are 10,000 in France today)? Clientele will also be able to count on the production of other Franco-German groups. The TTP and the Bundespost should also receive offers from Matra-Bosch, Jeumont Ericsson and the mastodons CIT-Alcatel-Thomson-Siemens-Philips. A select crowd for a vast market, starting in 1986. [Text] [Paris LES ECHOS in French 26 Mar 84 p 11] 9825

CSO: 5500/2641

INCREASING INTEREST IN ACCESS TO FOREIGN DATA BANKS

Vienna DIE PRESSE in German 28 Mar 84 p 7

[Article by Erich Hoorn: "Access to 'World Knowledge'--Austrians Discover Data Banks"]

[Text] Vienna--There is sustained interest by the Austrian economy, agencies, universities and other institutions in access to foreign data banks ("electronic libraries"). Radio Austria, which as a public agency establishes these connections, registers as many as 1,200 inquiries every hour. Beyond that are requests for information by way of the private networks of firms that sell data-bank information. To be sure, the data banks are still not the "big business" that was originally expected. After the United States, however, they are now succeeding more and more in Western Europe as well.

Worldwide there are now already about 2,500 data banks, but only about 1,000 of them are accessible over data networks. "We can establish a connection to these data banks," emphasizes engineer Peter Boesz from Radio Austria. A data bank that makes possible "access to the knowledge of the world" can store millions of pages. And Radio Austria can establish contact between an interested party in Austria and the computer with the stored data in a few seconds.

Most of the data banks are in the United States, especially in California, the Mecca of electronic data processing. In view of this development, many experts already fear that the Americans will ultimately dictate the prices and the selection of data. Thus 41 of the 50 data banks with information on patents are headquartered in the United States; 24 of these are accessible only there.

Western European countries often function only as collection points for information going into U.S. data banks. Because the data banks also play an important role in economic espionage, secret services like to query them. For this reason, a lot of data is not even stored in the computers and when it is only authorized people have access to it. The English language clearly dominates in the data banks. To be sure, original texts in German, French and sometimes in Russian are also stored, but then there is usually an English translation as well.

I.P. Sharp, the Canadian electronic data processing service organization with 600 employees worldwide, recently presented its offer in Vienna. Business manager Gottfried Bach emphasized in a "press" conversation that the knowledge in 110 numerical data banks with 50 million time series can be provided worldwide--in Austria as well--over their own data network. In contrast to literary data banks, time series are offered covering, for example, such things as the development of the gross national product or foreign trade. The firm also has three partners in Austria, namely, Austrian Energy Statistics, Business-Cycle Test Data of the Association of Industrialists and the Vienna Institute for International Economic Comparisons (CEMA statistics). "There is a particularly great interest in CEMA data," is the word from I.P. Sharp, which has more than 600 local access points available worldwide over its own network at the cost of a telephone call. Even in Hungary, increasing interest is being shown in access to Sharp data banks.

#### Increasing Debt Heightened Interest of Banks

Especially the growing debt of the Third World has increased the interest of the banks in important economic data. That is the reason for the founding of the Institute of International Finance in Washington, to which 200 banks belong. The members also have direct access to Sharp data.

Bach emphasizes that the data banks are still not the big business that they are often thought to be. Sharp, which meets its costs in this area, is also a software house. There is still too little competition in the data-banks sector, the market is still insufficiently prepared and so far there has not been all that much interest in Europe. That, however, is constantly changing and there is more and more acceptance, particularly in Austria, Switzerland and Germany, according to Sharp. The U.S. market, however, is still most interesting.

The Vienna branch of the U.S. computer concern Control Data also uses a worldwide network to offer information from data banks on, for example, banks, stock markets, technical licenses as well as information on over 450,000 enterprises from 950 different branches in the United States.

#### "Arrogant Policy of the United States"

Control Data also has an agreement with MANZ Data Banks--subsidiary of the Austrian publishing house MANZ--which has access to 750 different data banks. The information ranges from technical literature to market reports and economic news to company information, statistics and patents. As business manager Dr Kurt Bednar stressed in a "press" discussion, the firm is increasingly falling back on European data banks, because the Americans are pursuing "arrogant power policies." Austrian data banks are hardly being tapped, "because they are not satisfactory." MANZ is a broker which not only provides access to data banks but also advises its customers, that is, it offers problem solutions. It also maintains the appropriate legal advisers.

The Austrian Literature Information Center (OeLIZ) also offers an extensive information service with access to more than 150 foreign data banks, whereby the fields of energy, physics and mathematics are covered. The OeLIZ collects, prepares and sends to data banks the technical literature that appears in these sectors in Austria.

PRIVATIZATION, IMPORTS THREATEN DOMESTIC TELEPHONE MAKERS

Government Policy Blamed

Copenhagen AKTUEL in Danish 9 Mar 84 p 20

[Article by Lennart Weber: "The Government Is Gambling with 1,200 Jobs"]

[Text] The government is gambling with 1,200 jobs. In an effort to privatize the public sector, the government has brought two Danish telephone factories into serious danger. If no action is taken, the GNT factory in Copenhagen and the Standard Electric factory in Horsens may get into difficulties in the course of a few months.

The government's plans have attracted attention in the trade unions, where Dansk Metal [Danish Metal] and the Central Organization of the Metal Workers have reacted vigorously to those plans.

The minister for public works, communications and transportation, Arne Melchior, is the one who has nurtured the idea that the telephone sector should be liberalized rapidly to the extent possible. The gist of the plan, among other things, is that the importation of cheap foreign telephone instruments is to be admitted.

Up until the present, the production and sale of telephones has been restricted to two Danish factories. They are GNT Automatic, which is owned by Det Store Nordiske Telegraf-Selskab [The Big Nordic Telegraph Company] and the Swede L. M. Ericsson, and Standard Electric Kirk in Horsens, which is owned by the International Standard Electric Co, which is a multinational firm.

The two enterprises sell close to 150 million kroner worth of telephones on the Danish market every year. Furthermore, they export approximately twice as many telephones. Among other things--by virtue of their good quality--they sell telephones in the Far East.

"We must advise the government, as strongly as we can, against putting its liberalization plans into effect," Georg Poulsen, the chairman of the Metal Workers, says. "If the importation of telephones is permitted, jobs will be brought into the danger zone and Denmark will be in danger of losing the telephone exportation orders it is getting now. For that reason, we have

advised Minister Arne Melchior not to adopt those plans."

If jobs are endangered, that is owing to two important circumstances. First, Danish high-quality products cannot compete--where prices are concerned--with products from countries where low prices prevail. It is estimated that if liberalization were carried out, 50 percent of the Danish market would be taken over by imported products. That in itself would involve danger for the future of the Danish businesses. With a small domestic market, it is hard to keep development work going, and consequently to support exports.

But in the second place--and a circumstance that is much more important--the multinational concern that owns the Horsens enterprise would have less interest owning in a Danish factory. As a result of a liberalization, that concern would be able to sell products in Denmark that were produced cheaply somewhere else in the world. The Horsens enterprise could quickly be reduced to a firm dealing in the multinational concern's products on a wholesale basis in Denmark where the telephone market was concerned.

#### Government Orders

One can obtain a clue to the consequences of a liberalization from earlier experience in the market for telephone-related products. There was a liberalization of that market, and after that the Danish factories lost a significant part of the domestic market. When that happened, they also no longer had any basis for developing new products, and the market was taken over by foreign companies, by and large.

One can find another clue in developments on the international electronics market. The United States and France have strong positions. That is due to a great extent to the fact that those two countries gave big government orders to American and French companies, respectively. Those big orders created a basis for development work that, in turn, made it possible to increase their exports.

#### Minister Denies Import Significance

Copenhagen BERLINGSKE TIDENDE in Danish 10 Mar 84 Sect III p 12

[Article by Erik Bendt Rasmussen and Dan Axel: "Importation of Telephones Feared by the Danish Factories"]

[Text] The minister for public works, communications and transportation, Arne Melchior, is considering permitting the importation of foreign telephones to give the consumers freer choice. At present, it is the companies that produce telephones which determine the selection of telephone instruments that is available.

The GNT telephone factory in Copenhagen and Standard Electric Kirk in Horsens do not want their livelihoods to be threatened--as those firms and the trade unions fear--just because permission is given for the importation of foreign



telephones that consumers will then be able to buy in department stores or radio shops and from electricians instead of from the companies that manufacture telephones, as is the case now.

That is what Minister Arne Melchior (Center Democratic Party) is thinking of doing. He says that his ministry is working on a liberalization of the entire telephone sector at present. A proposal can be expected in the course of the spring. If that comes to anything, it will mean, in practice, that the consumer will not be obliged, as at present, to buy extra telephones from the companies that manufacture them in Denmark. "The Danish telephone companies are in a strong position, so I do not think that they are threatened by imports from abroad, Arne Melchior says. Melchior lays down two crucial conditions for admitting the importation of foreign telephones.

#### Not Talking about the Same Quality

"In the first place, there must be quality control, and in the second place, each subscriber ought to have one Danish telephone. In that way, it will be the natural thing to install a Danish telephone when a new subscriber is being connected to the circuit. If subscribers want to have several telephones, it must be possible for them to choose," Melchior says.

Director Knud Jacobsen of Standard Electric Kirk says that even though he does not have detailed knowledge concerning Melchior's plans, he is able to say that they will not threaten his company's existence.

"At present," he says, "we are protected by the fact that the Danish telephone companies sell Danish telephones to their customers, but we in the industry have not asked for that protection. I think that telephones from GNT and Kirk can easily compete with imported telephones, which, as far as I know, are supposed to be extra instruments, while the instrument the telephone company installs is to be a Danish one in each case. "Furthermore, the prices of Danish and foreign telephones do not vary a great deal when one is talking about instruments of the same quality. And I assume that the consumers want quality, which is equally expensive everywhere. Of course, one can buy a cheap extra telephone if somebody imports instruments of that kind, but if one does so one should be aware that conversations cannot be carried on over both telephones simultaneously, and that disposes of the idea of an extra telephone.

"In contrast with GNT's telephones and ours, the cheap instruments have carbon microphones instead of electrodynamic microphones, and the cheap instruments are also electromechanical, in contrast with the Danish ones, which are fully electronic. Therefore two conversations can be carried on over both telephones simultaneously."

If the market is to be free, Jacobsen thinks that it may be necessary for Kirk to start importing telephones so that it will not lose a portion of the market. Jacobsen states that he is satisfied with Melchior's idea that imported telephones are to be approved, and the telephone companies whose cable networks they are to make use of must adjust themselves to that idea. Jacobsen is also

pleased that, in connection with the processing of a new subscription to telephone service, the subscriber's first telephone is to be of Danish manufacture. If he wants extra instruments, the subscriber can choose from among other telephone products.

#### The Industry Wants To Be Included in the Consultations

"The market for extra telephones is a big one, and that is a significant part of our production at present," says Jacobsen, who wants Melchior to involve the telephone enterprises in his planning.

Director P. Baatrup of GNT says the same thing. He says that extra telephones of foreign origin can be obtained for small amounts of money. One can buy telephones in the United States for approximately \$10 apiece, but when one does that the quality leaves something to be desired.

"If the importation of cheap foreign telephones is permitted in the immediate future, that will be quite harmful to the GNT, but I hope that the minister will involve us in the discussions very soon. In any case, we must hope that there will be a period of adjustment. If the situation is going to be such that the consumers can buy extra telephones in a number of retail stores, in contrast with the present situation, when that can only be done in the telephone companies' shops, we can expect that there will be price competition. But up to the present, Danish telephones have held their own on the basis of quality," Per Baatrup says.

If one buys an extra telephone from somebody other than the telephone companies, one does not get free servicing of the instrument included in the price of the subscription to telephone service. The cheapest keyboard apparatus, the Mark I, when purchased from KTAS [Kobenhavns Telefon A/S], costs 200 kroner when first subscribing and 25 kroner per quarter as an extra telephone.

9266

CSO: 5500/2621

TELEDATA TRIAL COMPLETED; COMMERCIAL SERVICE TO START SOON

Copenhagen BERLINGSKE TIDENDE in Danish 16 Mar 84 Sect III p 9

[Article by Karin Kaas: "Teledata Experiment To Get Commercial Status Beginning in April"]

[Text] The 2-year Teledata experiment will come to a conclusion in March and will be replaced by an actual commercial service. Interest in using Teledata has increased sharply during the past year among commercial users and private individuals.

Danish Teledata has come to stay. The 2-year experimental period will run out at the end of March, and the experiment then will gradually turn into an actual commercial service that can deliver information to the business community and to private users.

For the present, private individual users of the system can be sure that their subscriptions will cover the remainder of the year. A final decision on whether a permanent Teledata service embracing both commercial and private users is to be set up will not be taken until an all-inclusive evaluation of the experiment has been made.

The Teledata experiment is being monitored constantly by a group of research workers that has collected observations by purveyors and users of Teledata. Up to the present, that group has put out three partial reports on the experiment, and the last, and ultimate, evaluation will be available in October 1984.

Marketing the New Medium

But beginning with 1 April everyone who is interested will be able to take out a subscription to Teledata, and that has led the Teledata administration to get a regular marketing program started for the new medium. They are trying to attract new purveyors of information and groups of users of the service and to adapt the two groups' desires and needs to each other.

The head of Teledata, Jorgen Mehl, has told BERLINGSKE TIDENDE that interest in Teledata has increased especially sharply during the past year. In part, that is a consequence of the fact that a considerable increase in the quantity and

quality of the information that was included has taken place and also of the constantly increasing number of microcomputers in private homes. The fact is that many microcomputers can draw information from Teledata, thereby making the acquisition of a special Teledata receiver superfluous.

#### 65,000 Entries in the System

At present, Teledata has 170 suppliers and 800 users. At the present time, the suppliers of information have put not quite 65,000 entries into the system. The number of entries from the individual suppliers varies a great deal, and it falls between a few score and several thousand entries. For example, the Gyldendal publishing house has put in an encyclopedia that contains 12,000 entries. Other big suppliers of information are Gutenberghus, De Danske Statsbaner [the Danish State Railways], Den Danske Bank [The Danish Bank], Statens Informationtjeneste [State Information Service], Jysk Bilauktion [Jutland Automobile Auction], Datacentralen [Data Center], Spies Rejser [Spie's Travel Agency], Handelsbanken [Commercial Bank], Privatbanken [Private Individuals' Bank], the SAS [Scandinavian Airlines System], Provinsbanken [Provincial Bank], Irma and Ejendomsmaeglernes Data-Centrum [Real Estate Agents' Data Center].

9266

CSO: 5500/2621

ROLES OF FIBER OPTICS, TV-SAT, TDF-1 DEBATED

Paris SCIENCES & AVENIR in French Feb 84 pp 32-37

[Article by Albert Ducrocq: "Television From the Skies"]

[Excerpts] The broadcasting of television programs by satellite has undergone a spectacular development throughout the world. Far from being a competitor for satellites, cable is most often an indispensable link, a thing which France, which continues to hesitate between the two, does not seem to have understood. But a decision will have to be reached fast, because television from the skies is here, as illustrated by the demonstration carried out at Hotel Meridien in Paris. And the public will not forever allow itself to be deprived of a freedom available in other countries.

Cable or satellite? That is the question which most countries are asking themselves about television broadcasting. And behind this question are hidden two concepts of image distribution, as is perfectly well proven by the ups and downs which have stirred France's television broadcasting world for the past ten years.

During this period, television by satellite was presented to the French as a panacea: a single transmitter in geostationary orbit makes it possible to cover the entire country, whereas 1500 ground repeaters are needed with the conventional formula, without even then being able to eliminate all the shadow zones. To be sure, the geostationary orbit is distant, and the satellite must be powerful for its transmissions to be readily received. But the calculations carried out by the European countries appeared very encouraging: for a one-ton satellite--a weight which can be placed in geostationary orbit under reasonable economic conditions--modern technology assures an electric power of several kilowatts, making it possible to supply a transmitter of several hundred watts, which is enough for a beam that concentrates its power over an area of about one-half million square kilometers, the size of a European country.

With these considerations in mind, the European countries became aware of the advantages which--for once--the size of their territories lend them with respect to the United States. The idea of satellite television meandered on

its way, interesting the Germans in particular, the smallness of their land constituting a trump card (FRG covers less than 250,000 square kilometers). In 1978, they undertook feasibility studies which also interested the Italians.

The French do not want to be left behind, and they even hope to lead the way. Is this not both a fabulous market and an excellent opportunity for progress in advanced technologies? In October 1979, during a summit meeting between the two countries, France and Germany agreed to pool their resources in the study and fabrication of a television satellite, of which two would be built at first: one of them, TV-Sat, would cover the German territory, and the other, TDF-1, would cover France.

The construction of the satellite will be undertaken by the industrial group Eurosatellite. Prime contracting will be provided by an integrated project group composed of personnel from the four member companies (Aerospatiale, Thomson-CSF, AEG-Telefunken, and MBB); it will be coordinated by MBB, and built at its Ottobrun plant. TV-Sat will be integrated at MBB, and TDF-1 at Aerospatiale's Cannes plant, with Thomson-CSF being responsible for the joint definition of payloads.

It will be a highly sophisticated satellite, stabilized on three axes and using the most advanced technologies, with ultralight solar panels capable of supplying one kilowatt with only 25 kg of panel weight. The cells will be cemented on a flexible substrate of kapton and carbon fiber cloth. High electrical power will thus be available: 3.9 kW for the preoperational TDF-1, which will carry 12 TWT's (travelling wave tube), and whose deployed panel will span 22 m; 5.8 kW for the operational TDF-1 (15 TWT's and a 39-m panel). The satellite structure will make extensive use of ultralight elements of sandwiched carbon fibers and honeycombs; new designs are made for thermal regulation, using heat pipes, protection, solar reflectors, and paints. It was also decided that in order to orient their antennas to within one one-hundredth of a degree, TDF-1 and TV-Sat would be provided with a deformable fixed orientation system between platform and reflector, whose position would thus be automatically controlled to neutralize any angular deviation of the satellite. Lastly, the attitude control will use Aerospatiale's kinetic wheel with magnetic bearings, whose known advantage is an absence of friction which eliminates both wear and heating.

The design is quite naturally modular, with:

A service module and a propulsion module which will be common to TDF-1 and TV-Sat; the solar generator is also identical (with its length being a function of power);

Elements that differ depending on requirements, as in the case of the communication module and the antenna system.

TDF-1's body will be 2.8 m high (against 2.2 m for TV-Sat, which will carry only 5 TWT's), and weigh 1028 kg for the preoperational model and 1164 kg for the operational one.

Like TV-Sat, TDF-1 will offer three channels (with the eventual possibility of using the satellite's five potential channels). The transmission power will be 400 W. Consequently, within an elliptical area that includes all of France, Belgium, and Switzerland, as well as the south of England, the north of Spain, the south of Germany, Tyrol, and the north of Italy, it will be possible to receive broadcasts with individual antennas of only 90 cm in diameter; the prototype for these antennas was built by Thomson, who claims to be ready for mass production whenever it receives a green light.

In addition, a large reception ellipse for TDF-1 using collective antennas, covers all of the British Isles, the two German Republics, Czechoslovakia, Yugoslavia, Italy, most of Spain, and a thin strip of North Africa. Within this larger ellipse, reception will be possible with antennas of 2.26 m in diameter.

TDF-1 aims at no less than 63.9 dbW, with the Germans expecting 65.6 dbW from their TV-Sat.

Everything is therefore perfect, except for one detail: no one knows what TDF-1 will broadcast. The tool has been created, but the selection of programs has been postponed; only a decision of principle has been reached, that TDF-1 will retransmit TF-1 and Antenne 2, with more information being forthcoming about the use of the third channel. In other words the customer is not told what new programs he will receive, but he is told that in order to receive in another way what he already receives, he will have to buy a parabolic antenna and an adapter, which will have to be mass produced in order for prices to remain accessible.

A schedule has already been fixed. The first TDF-1 will be launched by an Ariane rocket at the end of 1983, the second one being expected to head for space six months later, meaning in mid-1984 at the latest.

At least that is what they were saying in 1979. And here we are in 1984, without any of it having been realized according to the timetable. No TDF satellite will be placed in orbit this year.

The program was delayed for technical reasons, which are themselves perfectly understandable given the very ambitious nature of the project. New measures have been taken to have TDF-1 launched by the Ariane 3 rocket, of which none has yet headed for space. According to this new schedule, the launching of TDF-1 is not really expected before Ariane L22, in November 1985.

But this satellite will be only experimental because in the meantime, in 1982, the government decided to install cable throughout France using optical fibers. In fact, little by little, officials have become aware of cable's advantages, notably from the quantitative standpoint, since there is practically no limit to the amount of information that can be sent through an optical fiber; and if France had an optical fiber network comparable to the telephone network, it could carry all the television programs that one could want. Not to mention the considerable advantage of dialog.

With a satellite, you the viewer play a passive role: you receive its transmissions but you cannot address it. On the other hand, optical fibers allow transmissions in both directions, and a very large number of viewers can thus participate in a program, were it only by answering yes or no to a question, by awarding a rating, or even by suggesting a title. With the keyboard of the family microcomputer nothing could be easier, as long as a cable network exists, of course. But for the time being this is exactly what we are promoting, the General Directorate for Telecommunications (DGT) is now explaining!

In the new plan which it proposes, the satellite is not actually excluded. The optical fiber network will in fact not cover all of France overnight, and during its installation period the television satellite will play a useful role as a bridge, comparable to the one played by the business satellite with respect to the high speed network available on the ground.

Be that as it may, TDF-2 is expected to be less powerful than the operational TDF-1. This would allow a more economical satellite, even though the receiving antennas on the ground would have to be not 90 cm, but 226 cm in diameter. This means that they would be inaccessible to private parties, or at least to those who live in private homes. These 226-cm antennas would be installed on roofs, with a single one being sufficient for a group of buildings, and even for an entire cabled city. In any case, individual antennas would have been conceivable only for private houses; for apartment buildings, it has been pointed out, the signals from a single antenna would have had to be distributed. At this stage of the game, it matters little whether the antenna measures 226 cm or 90 cm; the higher price of the former will result in an insignificant charge for the user if the cost is divided among many people. Ultimately, the operation would be profitable.

But the economic aspect is not the only one from which this matter can be viewed: just when the communications monopoly was about to slip from DGT's hands with individual antennas, the agency grabbed it again with the formula of cable connected to a collecting antenna.

The gist of the problem may indeed be the political and administrative structure which in France turns communications into an absolute state monopoly. Some deviations from this rule had been observed in recent years with the proliferation of walkie-talkies, remote control devices, CB, and unlicensed radios; actually, these deviations are only tolerated actions which tend to be less and less tolerated. For a while at least, the victory of cable would be a triumph of the monopoly.

The whole question is to know whether cable will prevail, particularly in the sophisticated form of fiber optics, which France has singled out. Between 1979 and 1984, all eyes were on the satellite, awaiting an operational TDF-1, which now we know will not exist. Between 1984 and 1989, all eyes will be on cable and its rate of development, a rate which is estimated very differently by various people, primarily because of technical considerations.



The utilization of optical fibers is indeed not an easy one, if only because splices are very difficult to make; they cannot be installed as readily as electrical wires. Once more, there are some delays from the start. When the plan was initiated in 1982, the official forecasts were for 100,000 optical fiber connections installed in 1983, 300,000 in 1984, 1 million during 1985, and 1 million during each of the following years. When we reminded a DGT official about the first of these figures, he answered: "We were misunderstood. For 1983, the figure referred to 100,000 connections ordered, not 100,000 installed connections." So be it, but where are the orders? We are forced to note that we hear less and less about the 300,000 connections expected in 1984, and more about the 1985 programs.

And when mentioning prices, the figures discussed are quite different: 6000 francs per optical fiber connection had once been indicated under the assumption of mass production, when the technology would be known and tested. But when will that be? There are those who speak of costs which could be approximately 30,000 francs per outlet, which in 1985 would bring the bill for one year's installation of optical fiber to 30 billion francs.

In psychological terms the situation does not appear to be any clearer. Indeed, the problem is not the installation of connections for private customers, but their efficient and knowledgeable use. On this point, the answers are too numerous--we all gladly review all that could be done in absolute terms--as well as nonexistent, because no one is capable of describing with certainty the use which private parties will make of optical fibers. Let us not forget that currently, with their telephone lines, they do not even send an average of one megabit per day (and under the circumstances, one analog megabit represented by sound).

Now we suddenly speak of millions of megabits! A rejection phenomenon is certainly not out of the question. It has every chance of being merely momentary (this writer is privately convinced that humanity will see a great era of communications), but when you consider the short term, these psychological factors, after the technical ones, do throw some uncertainty on the development of cable, at a time when it is being relied upon to play the leading role stolen from the satellite.

Actually, it certainly was a mistake not to create a satellite-cable synthesis, and to shift from one extreme to the other. Today's goal is to close off both satellite and conventional cable, by extensively developing optical fibers. But in the meantime, it is irrational not to allow full expansion for the television satellite, given the grey matter invested in its construction.

Throughout the world, satellite television programs are presently undergoing a spectacular development, with the Japanese in the lead. Beginning next May, the Japanese satellite PS 2-A, built by Toshiba and General Electric, should start transmitting, from a point plumb in line with Borneo, two color channels to 420,000 households located in unfavorable regions of the Japanese archipelago.

The construction of the German satellite TV-Sat quite naturally continues, with a launching by Ariane rocket being expected in September 1985. The Italians and Scandinavians have their own television satellite projects.

The calendar of the American shuttle is also marked with the launching of a Luxsat satellite in February 1986. Discussions have been held to dissuade the Luxembourg government from carrying out this plan. But the latter has reiterated: "Whatever happens, Luxembourg will use the channels and orbit allocated to it by the Geneva International Conference." What makes it quite unlikely that this country should abandon the idea, is that the audiovisual sector contributes 5 percent of the Luxembourg's national budget. One must therefore think that in little more than two years, a satellite in a geostationary orbit could speak in French (Luxsat programs will be broadcast in German, French, and Flemish), the transmissions being received by cable in the large European cities, as well as by private parabolic antennas. A European television company to broadcast programs was created in Luxembourg, with 51 percent of the shares being held by Radio Luxembourg shareholders, and 19 percent by European partners, essentially the FGR daily press.

While France orients itself toward optical fiber cable, all the other countries choose satellite broadcasting.

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CSO: 5500/2631

GOVERNMENT APPROVES CORONET TELECOMMUNICATIONS SATELLITE

Luxembourg LUXEMBURGER WORT in German 16 Mar 84 p 3

[Article: "Werner-Satellite: Council of Ministers Approves Nine Billion Luxembourg Franc 'Coronet' Project. Luxembourg Gets a Telecommunications Satellite. Major Source of Revenue"]

[Text] ReF. The GDL satellite project, which was announced by Minister Pierre Werner last year, is becoming a reality: Yesterday evening the Council of Ministers approved the performance specifications for the "Coronet SA" company which will be granted a license by the government of Luxembourg for the use of telecommunications frequencies. The satellite, which "Coronet" will put into geostationary orbit, will be used primarily for television broadcasting.

The Council of Ministers debated for two hours yesterday evening over the performance specifications of "Coronet", to be established as Luxembourg's satellite company. Minister Pierre Werner, who from the beginning has personally supervised the development of this project which is so important to our country, reported to his fellow ministers on the negotiations which took place during the past few weeks at Luxembourg postal headquarters between American experts (headed by Clay Whitehead) and specialists from the Luxembourg government. Part of the Luxembourg delegation was present yesterday evening at the meeting held by the ministers.

Minister Werner told the council that the negotiations for the GDL project (its international designation) reached a positive conclusion this week. The council then accepted the contract proposal for the performance specifications and the granting of a license. Both texts are being forwarded to the Council of State and submitted to the parliamentary commission in charge.

The satellite--not a DBS satellite as planned by RTL, but rather a telecommunications satellite--will in all probability be launched into space as soon as next year aboard NASA's space shuttle, and placed in a geosynchronous position. The government of Luxembourg already applied last summer to the "International Telecommunications Union" in Geneva for the necessary frequencies. Objections by another country which might hinder the project are no longer possible since the deadline has passed. Only some interference problems might yet have to be clarified. As Minister Pierre Werner told us

yesterday evening, final approval for the allocation of frequencies in Geneva is really only a formality.

#### Ground Stations in the Grand Duchy

The "Coronet" company is subject to the laws of Luxembourg and has responsibility for use of the satellite. Its shareholders will include a number of high ranking partners, some in the United States, but the majority located in Europe. The names of the partners were not released. "Coronet" will finance the satellite project, i.e. will purchase the two required satellites (a primary satellite and a so-called back-up satellite). It will also pay for launching the satellite into space and for establishing the required infrastructure in the Grand Duchy. Overall the cost of the project should amount to nine billion Luxembourg francs, of which two billion will be invested in Luxembourg.

#### Several Hundred Jobs

The experts are already looking for an undeveloped area in which to construct the ground station so that transmissions from the ground antenna to the satellite will not be subject to interference. The satellite will also be completely controlled from within Luxembourg, requiring a number of additional technical facilities. Therefore, according to Minister Werner, several hundred new jobs will be created.

#### Primarily Television

According to reports, "Coronet" will offer the majority of available channels for broadcasting television programming. Unconfirmed reports have said that some channels will also be available for use by the postal system, e.g. for data communications. The television channels are to be offered to interested parties in Europe. Rumor has it that there are already more interested parties than available channels. The fees for the use of one channel for one year could run to 200 million Luxembourg francs. A suggestion for using one or more channels has also been submitted to RTL. However, according to a government report, the license to be granted to "Coronet" in no way adversely affects RTL's plans to participate in the French TDF project. Gust Graas, general director of RTL, will give a more detailed report to the board of directors of his company this coming Thursday. Inside sources claim, however, that RTL currently still favors participation in the French project despite the advantages the ultramodern technology of the GDL satellite will provide.

In fact, it could be that the board of management of RTL is being pressured by the French stockholders, particularly by the state-owned "Havas," and sees no alternative to its participation in the TDF satellite project. The GDL satellite will be financially much more attractive than the French satellite. The fees demanded by "Coronet" would be approximately one quarter of what RTL would have to pay the French. On the other hand, of course, a telecommunications satellite requiring an extensive ground-based antenna system is not as appealing as a DBS. The question of proprietary rights is also different, because in the case of a DBS only the country of origin is entitled to

proprietary rights, while with a telecommunications satellite the proprietary rights are paid for wherever programming is able to be received. This also explains in part the difficulties which the French-Belgian-Swiss TV 5 satellite program is having.

#### Major Source of Revenue

In addition to creating new jobs in Luxembourg, the expected licensing fees and tax revenues of the GDL project will help to increase the national budget substantially. Moreover, another economic upswing is expected as a result of the establishment of related services and industrial production.

#### "Chances Are Good"

Minister Pierre Werner left the meeting of the Council of Ministers yesterday evening visibly pleased. The fact that so many of the details had been made known showed how far the project had progressed. When asked by us about GDL's chances, Pierre Werner answered with great confidence, "They look good!"

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HIGH COST OF BRITISH DIRECT BROADCAST SATELLITE QUESTIONED

Stockholm NY TEKNIK in Swedish 23 Feb 84 p 6

[Article by Maria Morris and Sverker Nyman]

[Text] In Britain, the discussions are raging on the direct broadcast satellite which is scheduled to be ready in well over 2 years.

The British Broadcasting and Television Corporation, the BBC, finds the satellite project a too costly affair.

The BBC has threatened to withdraw from the satellite project unless financial aid is arranged and has approached the commercial television enterprises, asking them to take on part of the costs. However, these enterprises have shown little interest toward the BBC.

There are possibilities of building a less costly satellite than the one now planned, says Independent Broadcasting Authority, IBA, which is the spokesman for the commercial television enterprises.

IBA has been promised two satellite channels as of 1992, and does not appear to see any major advantages in participating in the satellite project already in 1986.

Emergency Meeting with Mediator

This has given rise to a number of emergency meetings, chaired by a mediator appointed by the government.

The negotiations are expected to continue for another few months. Unisat, the industrial syndicate which will be building the satellite, however, is pressing for an early solution.

One reason for the little interest in the project on the part of the commercial enterprises is that the BBC expects to have only 200,000 subscribers to the satellite TV after the first 2 years.

The transmissions are planned to take place in the form of paid TV and are consequently coded. To receive the transmission, the BBC will have to supply a decoder, against payment.

The satellite will be covering large parts of Western Europe, and the BBC is hoping for a large number of foreign subscribers.

The transmission system will be new, MAC, Multiplexed Analogue Components.

The British hope that other countries will choose the same standard.

The satellite will have capacity for stereo sound both for radio and TV. One of the channels is intended for long films and the other one for more general material.

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